

IN THE CLAIMS

Please amend claims 1 and 6 as indicated. Please cancel the withdrawn claims 9-15 and 20-24.

1. (Currently Amended) A process for determining the tension in a moving web, comprising the steps of:

providing a web moving at a determined speed, the web having a determined basis weight;

creating a wave in the moving web;

determining the speed of the propagation of the wave; and

determining the tension on the moving web through a mathematical relationship between the wave speed, the basis weight of the web, and the speed of the web, wherein the instability index of the web is greater than or equal to 0.5, and is measured by the following equation:

instability index = $v/(v+vd)$ or $v/(vd-v)$; wherein:

v = web speed; and

vd = wave speed.

2. (Original) The process for determining the tension in a moving web of claim 1, wherein the tension of the web is between about 10 Nt/m and about 35 Nt/m, and the speed of the web is about 25 m/s, and the basis weight of the web is about 15 gsm.

3. (Original) The process for determining the tension in a moving web of claim 1, wherein the instability index of the web is greater than about 0.8.

4. (Original) The process for determining the tension in a moving web of claim 1, wherein the step of creating a wave in the moving web is accomplished by an air pulse on the web.

5. (Original) The process for determining the tension in a moving web of claim 4, wherein the step of determining the speed of the propagation of the wave is accomplished by the use of two laser displacement transducers which each provide a signal and are also configured for measuring the speed of the web.

6. (Currently Amended) A process for determining the tension in a moving web, comprising the steps of:

providing a web moving at a determined speed, the web having a determined basis weight;

creating a wave in the moving web;

determining the speed of the propagation of the wave; and

determining the tension on the moving web through a mathematical relationship between the wave speed, the basis weight of the web, and the speed of the web, wherein the instability index of the web is greater than or equal to 0.5;

wherein the step of creating a wave in the moving web is accomplished by an air pulse on the web;

wherein the step of determining the speed of the propagation of the wave is accomplished by the use of two laser displacement transducers which each provide a

signal and are also configured for measuring the speed of the web; and

~~The process for determining the tension in a moving web of claim 5,~~ wherein the air pulse is controlled by a computer, and the signals from the two laser displacement transducers are controlled and analyzed by the computer.

7. (Original) The process for determining the tension in a moving web of claim 6, wherein the signals from the two laser displacement transducers are bandpass filtered, and then differentiated.

8. (Original) The process for determining the tension in a moving web of claim 7, wherein the signals are mathematically cross-correlated to determine the time delay between the signals generated by the two laser displacement transducers.

9. -15. (Cancel)

16. (Original) A process for controlling a moving web, comprising the steps of:
providing a web moving at a determined speed, the web having a determined basis weight;
generating a wave in the moving web;
measuring the speed of the wave in the web; and
determining the instability index where the instability index is in a desired range being between about 0.6 and 1.0.

17. (Original) The process for controlling a moving web of claim 16, wherein the desired range is between about 0.6 and about 0.9.

18. (Original) The process for controlling a moving web of claim 16, wherein the desired range of the instability index is between about 0.8 and 1.0.

19. (Original) The process for controlling a moving web of claim 16, wherein the desired range of the instability index is between 0.7 and 1.0.

20. -24 (Cancel)